ELSEVIER

Volume 258, Numbers 1–2, 1 August 1997

Journal of ALLOYS AND COMPOUNDS

Contents

Preface vii

Guest Editor ix

International Advisory Board/Organizing Committee x

Chapter 1. Fundamental Aspects

Influence of the rare-earth transition-metal interaction on the room temperature magnetostriction (Invited paper) 1
F.R. de Boer, K.H.J. Buschow (Amsterdam, The Netherlands)

Low-temperature oxidation of metal surfaces (Invited paper) 7
M. Martin, E. Fromm (Stuttgart, Germany)

Hydrogen-induced anisotropy in $Dy_{0.73}Tb_{0.27}Fe_{1.5}Co_{0.5}$ 17
S. Kishore, G. Markandeyulu, K.V.S. Rama Rao (Madras, India)

Effect of V on microstructure and magnetic properties of polycrystal Tb–Dy–Fe alloy 20
H. Zhang, H. Zhu, T. Du (Beijing, China)

Chapter 2. Material Processes

Optimized TERFENOL-D manufacturing processes (Invited paper) 24
J.D. Snodgrass, O.D. McMasters (Ames, IA, USA)

Directionally solidified $Tb_xDy_{1-x}(M_yFe_{1-y})_{1.9}$ giant magnetostrictive materials and their applications in transducer 30
Z. Shi, Z. Chen, X. Wang, M. Lin, Y. Zhang (Xi'an, P.R. China)

Crystal growth of giant magnetostrictive Tb–Dy–Fe alloy 34
W. Mei, M. Yoshizumi, T. Okane, T. Umeda (Tokyo, Japan)

Magnetic properties and thermal stability of $PrFe_2$ compound 39
X. Zhao, J. Li, S. Liu, S. Ji, K. Jia (Beijing, P.R. China)

Effect of the pulverization processes of the magnetostrictive characteristics of giant magnetostrictive $Tb_{0.3}Dy_{0.7}Fe_2$ thin film . 42
M. Wada, H. Uchida (Kanagawa, Japan), H. Kaneko (Tokyo, Japan)

Chapter 3. Devices

Applications of Terfenol-D in China (Invited paper) 49
Z. Houqing, L. Jianguo, W. Xiurong, X. Yanhong, Z. Hongping (Beijing, China)

Design and fabrication of a low frequency giant magnetostrictive transducer 53
K.R. Dhilsha, G. Markandeyulu, B.V.P. Subrahmanyeswara Rao, K.V.S. Rama Rao (Madras, India)

Dynamic behaviour of Terfenol-D 56
K. Kondo (Ibaraki, Japan)

Actuators, transducers and motors based on giant magnetostrictive materials 61
F. Claeyssen, N. Lhermet, R. Le Letty (Meylan, France), P. Bouchilloux (New York, NY, USA)

A three-link arm type vibration control device using magnetostrictive actuators 74
K. Ohmata, M. Zaike, T. Koh (Kawasaki, Japan)

Estimation of the intrinsic magnetomechanical response of magnetostrictive actuators by dynamic simulations 79
G. Engdahl, F. Stillesjö (Stockholm, Sweden)

Elsevier Science S.A.

Magnetostrictive-driven fretting machines for interconnection research 83
H.C. Hardee, N.L. Hardee (Las Cruces, NM, USA)

Maximum output of a low frequency sound source using giant magnetostrictive material 87
H. Wakiwaka, K. Aoki (Nagano, Japan), T. Yoshikawa, H. Kamata, M. Igarashi (Numazu, Japan), H. Yamada (Nagano, Japan)

A study on torque induction in the giant magnetostrictive material 93
A.R. Rathore, T. Mori (Chiba, Japan)

Controlled high power actuation utilising Terfenol-D 97
M.G. Aston, R.D. Greenough, A.G.I. Jenner, W.J. Metheringham, K. Prajapati (Hull, UK)

Magnetostrictive actuation performance under digital variable structure control 101
R.J.E. Smith, A.G.I. Jenner, A.J. Wilkinson, R.D. Greenough (Kingston Upon Hull, UK)

Three-dimensional magnetostrictive vibration sensor: development, analysis, and applications 107
Y. Yamamoto, H. Eda (Ibaraki, Japan), T. Mori, A. Rathore (Chiba, Japan)

Methods and techniques to characterise Terfenol-D 114
R.D. Greenough, A.D. Wharton (Hull, UK)

Non-destructive testing of Terfenol-D 118
R.D. Greenough, M.P. Schulze, D. Pollard (Hull, UK)

Underwater acoustic transducers based on Terfenol-D 123
L. Kvarnsjö (Järfälla, Sweden)

Chapter 4. Thin Films

Giant magnetostrictive thin film materials and applications (Invited paper) 126
E. Quandt (Karlsruhe, Germany)

Giant magnetostrictive TbFe/Fe multilayers 133
E. Quandt, A. Ludwig, J. Mencik, E. Nold (Karlsruhe, Germany)

Magnetostrictive thin films by laser ablation deposition 138
A.G. Jenner, L.A. Stone, H.V. Snelling (Kingston Upon Hull, UK)

Effect of the substrate temperature on the microstructure and magnetostrictive characteristics of the $Tb_{0.3}Dy_{0.7}Fe_2$ film 143
M. Wada, H. Uchida (Kanagawa, Japan), H. Kaneko (Tokyo, Japan)

Magnetostriction and magnetic properties of Sm–Fe–B and Tb–Fe–B thin films and multilayers 149
T. Shima, H. Yokoyama, H. Fujimori (Sendai, Japan)

The magnetic properties of Tb-Fe-(B) thin films fabricated by rf magnetron sputtering 155
Y.S. Choi, S.R. Lee, S.H. Han, H.J. Kim, S.H. Lim (Seoul, Korea)

Magnetostriction of rapidly quenched Sm–Fe–B alloys 163
S.R. Kim, S.H. Lim (Seoul, Korea)

Effect of annealing treatment of the $Tb_{0.3}Dy_{0.7}Fe_2$ thin films on the magnetic and magnetostrictive characteristics 169
M. Wada, H. Uchida (Kanagawa, Japan), H. Kaneko (Tokyo, Japan)

Effects of the compositional change and the contamination on the magnetic and magnetostrictive characteristics of $Tb_xDy_{1-x}Fe_2$ ($x = 0$–1) films 174
M. Wada, H.H. Uchida, H. Uchida (Kanagawa, Japan)

Author Index of Volume 258 179

Subject Index of Volume 258 181